

Recent Developments In Ionic Liquid Electrolytes

For Nanocrystalline Dye Sensitized Solar Cells

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Nanocrystalline dye sensitized solar cells (DSC) are attracting considerable academic and industrial interest as low-cost, high efficiency alternatives to the conventional solid p-n junction photovoltaic devices. Encapsulation of volatile electrolytes is a critical issue in view of the practical applications. A viable solution to this problem is replacement of organic solvent electrolytes by ionic liquid electrolytes, whose vapor pressure is negligible. Ionic liquids with good chemical, thermal stability and wide electrochemical window have been recently pursued as alternative electrolytes for DSC. This lecture will summarize the most recent developments in the use of ionic liquid electrolytes containing iodide/triiodide as redox couple and other efficient alternative redox couples for DSC in competing with conventional organic liquid electrolytes.